

=> fil reg

FILE 'REGISTRY' ENTERED AT 11:24:13 ON 18 APR 2007
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2007 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 16 APR 2007 HIGHEST RN 930395-50-9
DICTIONARY FILE UPDATES: 16 APR 2007 HIGHEST RN 930395-50-9

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH December 2, 2006

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

=> d ide can tot 120

L20 ANSWER 1 OF 3 REGISTRY COPYRIGHT 2007 ACS on STN
RN 63733-35-7 REGISTRY
ED Entered STN: 16 Nov 1984
CN Cobalt alloy, base, Co,Sn (CA INDEX NAME)
MF Co . Sn
CI AYS
LC STN Files: CA, CAPLUS, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPAT2,
USPATFULL

Component	Component Registry Number
Co	7440-48-4
Sn	7440-31-5

13 REFERENCES IN FILE CA (1907 TO DATE)
13 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 146:11133
REFERENCE 2: 145:261093
REFERENCE 3: 144:322855
REFERENCE 4: 138:274598
REFERENCE 5: 127:100392
REFERENCE 6: 123:15241
REFERENCE 7: 108:159973

REFERENCE 8: 108:45899

REFERENCE 9: 105:215750

REFERENCE 10: 97:117487

L20 ANSWER 2 OF 3 REGISTRY COPYRIGHT 2007 ACS on STN

RN 57886-64-3 REGISTRY

ED Entered STN: 16 Nov 1984

CN Tin alloy, base, Sn,Co (9CI) (CA INDEX NAME)

MF Co . Sn

CI AYS

LC STN Files: CA, CAPLUS, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPATFULL

Component	Component Registry Number
-----------	------------------------------

=====+=====

Sn	7440-31-5
----	-----------

Co	7440-48-4
----	-----------

45 REFERENCES IN FILE CA (1907 TO DATE)

45 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 146:70352

REFERENCE 2: 145:445180

REFERENCE 3: 144:257678

REFERENCE 4: 143:329165

REFERENCE 5: 140:131895

REFERENCE 6: 138:404347

REFERENCE 7: 137:239058

REFERENCE 8: 137:12234

REFERENCE 9: 135:52699

REFERENCE 10: 132:70700

L20 ANSWER 3 OF 3 REGISTRY COPYRIGHT 2007 ACS on STN

RN 39286-52-7 REGISTRY

ED Entered STN: 16 Nov 1984

CN Cobalt alloy, nonbase, Co,Sn (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Cobalt alloys, tin- (7CI)

DR 115456-78-5

MF Co . Sn

CI AYS

LC STN Files: CA, CAPLUS, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPAT2,
USPATFULL

Component	Component Registry Number
-----------	------------------------------

=====+=====

Co	7440-48-4
----	-----------

Sn 7440-31-5

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

191 REFERENCES IN FILE CA (1907 TO DATE)
191 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 146:341039
REFERENCE 2: 146:277759
REFERENCE 3: 146:277741
REFERENCE 4: 146:256063
REFERENCE 5: 146:187500
REFERENCE 6: 146:48670
REFERENCE 7: 146:37521
REFERENCE 8: 146:29946
REFERENCE 9: 146:11737
REFERENCE 10: 145:361314

=> d ide can l10

L10 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2007 ACS on STN
RN 12394-61-5 REGISTRY
ED Entered STN: 16 Nov 1984
CN Cobalt, compd. with tin (1:2) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Tin, compd. with cobalt (2:1)
MF Co . Sn
AF Co Sn2
CI TIS
LC STN Files: CA, CAOLD, CAPLUS, USPATFULL

Component	Ratio	Component Registry Number
Co	1	7440-48-4
Sn	2	7440-31-5

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

48 REFERENCES IN FILE CA (1907 TO DATE)
48 REFERENCES IN FILE CAPLUS (1907 TO DATE)
5 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 146:255120
REFERENCE 2: 146:233528
REFERENCE 3: 146:209811

REFERENCE 4: 146:209579
 REFERENCE 5: 146:152256
 REFERENCE 6: 145:338982
 REFERENCE 7: 145:317946
 REFERENCE 8: 145:127534
 REFERENCE 9: 145:114142
 REFERENCE 10: 144:316062

=> d ide can l12

L12 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2007 ACS on STN
 RN 12526-67-9 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN Cobalt, compd. with tin (3:2) (7CI, 8CI, 9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Tin, compd. with cobalt (2:3) (8CI)
 MF Co . Sn
 AF Co3 Sn2
 CI TIS
 LC STN Files: CA, CAOLD, CAPLUS, USPAT2, USPATFULL

Component	Ratio	Component Registry Number
Co	3	7440-48-4
Sn	2	7440-31-5

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

37 REFERENCES IN FILE CA (1907 TO DATE)
 1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 37 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 145:338982
 REFERENCE 2: 145:107635
 REFERENCE 3: 144:359090
 REFERENCE 4: 144:112035
 REFERENCE 5: 141:263470
 REFERENCE 6: 141:91776
 REFERENCE 7: 140:306707
 REFERENCE 8: 140:238516
 REFERENCE 9: 139:153047

REFERENCE 10: 139:24815

=> d ide can l8

L8 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2007 ACS on STN
RN 7440-31-5 REGISTRY
ED Entered STN: 16 Nov 1984
CN Tin (CA INDEX NAME)
OTHER NAMES:
CN AT-SN
CN C.I. 77860
CN C.I. Pigment Metal 5
CN Metallic tin
CN PO 1
CN PO 2
CN Silver Matt Powder
CN Sn-HWQ
CN Sn-S 200
CN Sn-S-HWQ
CN SNE 06PB
CN TEGO 30
CN TEGO 60
CN Tin element
CN Tin Flake
CN Tin Paste 62-1177
CN Tin Powder
CN Wang
MF Sn
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOSIS, BIOTECHNO, CA,
CABA, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST,
CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, ENCOMPLIT,
ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA,
MEDLINE, MRCK*, MSDS-OHS, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, ULIDAT,
USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Sn

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

97794 REFERENCES IN FILE CA (1907 TO DATE)
7190 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
98024 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 146:350152

REFERENCE 2: 146:350085

REFERENCE 3: 146:349970

REFERENCE 4: 146:349855

REFERENCE 5: 146:349767
 REFERENCE 6: 146:349492
 REFERENCE 7: 146:349491
 REFERENCE 8: 146:349296
 REFERENCE 9: 146:349080
 REFERENCE 10: 146:349003

=> d que 122

L21 194 SEA FILE=REGISTRY ABB=ON PLU=ON SN/MF
 L22 55 SEA FILE=REGISTRY ABB=ON PLU=ON L21 NOT MASS

=> d his

(FILE 'HOME' ENTERED AT 09:51:02 ON 18 APR 2007)
 SET COST OFF

FILE 'HCAPLUS' ENTERED AT 09:51:26 ON 18 APR 2007

L1 1 S US20040053131/PN OR (US2003-664683# OR JP2002-271710)/AP,PRN
 E TANIZAKI/AU
 L2 47 S E15,E19
 E HIROAKI/AU
 L3 4 S E3
 L4 4 S E50
 E OMARU/AU
 L5 43 S E4,E6
 E ATSUO/AU
 L6 1 S E3
 SEL RN L1

FILE 'REGISTRY' ENTERED AT 10:11:45 ON 18 APR 2007

L7 21 S E1-E21
 L8 1 S L7 AND SN/MF
 L9 7 S L7 AND SN/ELS AND CO/ELS AND 2/ELC.SUB
 L10 1 S 12394-61-5
 L11 1 S 39286-52-7
 L12 1 S 12526-67-9
 L13 8159 S (CO/ELS OR COBALT OR 7440-48-4/CRN) AND (SN/ELS OR TIN OR 744
 L14 191 S L13 AND 2/ELC.SUB
 L15 184 S L14 NOT L9
 L16 80 S L15 AND NONBASE
 L17 3 S L16 AND CO(A)SN
 L18 171 S L15 AND BASE
 L19 2 S L18 AND CO(A)SN
 L20 3 S L11,L17,L19
 L21 194 S SN/MF
 L22 55 S L21 NOT MASS

FILE 'HCAPLUS' ENTERED AT 10:19:58 ON 18 APR 2007

L23 248 S L20
 L24 282 S COSN
 L25 515 S L23,L24
 L26 48 S L10

L27 50 S COSN2
 L28 81 S L26,L27
 L29 37 S L12
 L30 47 S CO3SN2
 L31 59 S L29,L30
 L32 99798 S L8,L22
 L33 4 S L25 AND L28 AND L31 AND L32
 L34 10 S L25 AND L28 AND L32
 L35 6 S L25 AND L31 AND L32
 L36 6 S L28 AND L31 AND L32
 L37 14 S L33-L36

FILE 'REGISTRY' ENTERED AT 10:24:29 ON 18 APR 2007

FILE 'HCAPLUS' ENTERED AT 10:26:04 ON 18 APR 2007

L38 13 S L25 AND L28 AND L31
 L39 23 S L37,L38
 L40 248 S L11,L17,L19
 L41 48 S L10
 L42 37 S L12
 L43 1 S L40 AND L41 AND L42
 L44 14 S L37,L43
 L45 1 S L1-L6 AND L44
 L46 56 S L1-L6 AND SONY?/PA,CS
 L47 4 S L46 AND PY<=2002 NOT P/DT
 L48 51 S L46 AND (PD<=20020918 OR PRD<=20020918 OR AD<=20020918) AND P
 L49 4 S L46 AND PY<=2003 NOT P/DT
 L50 52 S L46 AND (PD<=20030918 OR PRD<=20030918 OR AD<=20030918) AND P
 L51 56 S L47-L50
 L52 5 S L45,L51 AND L32
 L53 12 S L37 AND PY<=2002 NOT P/DT
 L54 12 S L37 AND PY<=2003 NOT P/DT
 L55 2 S L37 NOT L53,L54
 L56 18 S L52-L55
 L57 1828 S L40 OR SN(A)CO OR COSN OR L23 OR L24
 L58 14 S L57 AND L28 AND L31
 L59 4 S L58 AND L32
 L60 16 S L57 AND L28 AND L32
 L61 9 S L57 AND L31 AND L32
 L62 6 S L28 AND L31 AND L32
 L63 33 S L58-L62
 L64 23 S L63 AND PY<=2003 NOT P/DT
 L65 23 S L63 AND PY<=2002 NOT P/DT
 L66 3 S L63 AND (PD<=20020918 OR PRD<=20020918 OR AD<=20020918) AND P
 L67 3 S L63 AND (PD<=20030918 OR PRD<=20030918 OR AD<=20030918) AND P
 E ELECTRODE/CW,CT
 L68 0 S L64-L67 AND E3,E4
 L69 0 S L64-L67 AND E94,E95
 L70 3 S L64-L67 AND E95+OLD,NT
 L71 5 S L64-L67 AND ?ELECTRODE?
 L72 6 S L70,L71
 L73 1 S L63-L72 AND L1-L6
 L74 2 S L63-L72 AND SONY?/PA,CS
 L75 6 S L72-L74
 L76 20 S L64-L74 NOT L75
 SEL DN AN 1 13 15 16 20
 L77 5 S L76 AND E1-E15
 L78 11 S L75,L77
 L79 7 S L44 NOT L78

FILE 'REGISTRY' ENTERED AT 11:12:43 ON 18 APR 2007

L80 114970 S LI/ELS OR ?LITHIUM?/CNS OR 7439-93-2/CRN
L81 5954 S L80 AND (B/ELS OR (?BORON? OR ?BORAT? OR ?BORIC?)/CNS OR 7440
L82 1012 S L80 AND (GA/ELS OR ?GALLIUM?/CNS OR 7440-55-3/CRN)
L83 935 S L80 AND (SB/ELS OR ?ANTIMON?/CNS OR 7440-36-0/CRN)
L84 439 S L80 AND (CD/ELS OR ?CADIUM?/CNS OR 7440-43-9/CRN)
L85 1320 S L80 AND (AG/ELS OR ?SILVER?/CNS OR 7440-22-4/CRN)
L86 355 S L80 AND (HF/ELS OR ?HAFNIUM?/CNS OR 7440-58-6/CRN)
L87 9769 S L81-L86

FILE 'HCAPLUS' ENTERED AT 11:15:37 ON 18 APR 2007

L88 17007 S L87
L89 6 S L88 AND L57
L90 1 S L88 AND L28
L91 0 S L88 AND L31
L92 215 S L88 AND L32
L93 0 S L89,L90 AND L92
L94 7 S L89,L90
L95 5 S L94 NOT (98:72913 OR 96:122986)/DN
L96 0 S L95 AND PY<=2002 NOT P/DT
L97 0 S L95 AND PY<=2003 NOT P/DT
L98 4 S L95 AND (PD<=20030918 OR PRD<=20030918 OR AD<=20030918) AND P
L99 3 S L95 AND (PD<=20020918 OR PRD<=20020918 OR AD<=20020918) AND P
L100 4 S L98,L99
L101 3 S L100 NOT SOLUTION/TI
L102 14 S L78,L101
L103 14 S L102 AND (SN OR TIN OR LI OR LITHIUM OR CO OR COBALT OR ?CARB

FILE 'REGISTRY' ENTERED AT 11:20:07 ON 18 APR 2007

L104 2 S (CARBON OR GRAPHITE)/CN

FILE 'HCAPLUS' ENTERED AT 11:20:09 ON 18 APR 2007

L105 2 S L104 AND L102
L106 14 S L103,L105
SEL HIT RN

FILE 'REGISTRY' ENTERED AT 11:21:11 ON 18 APR 2007

L107 18 S E16-E33
L108 13 S L107 AND L87
L109 5 S L107 NOT L108

FILE 'REGISTRY' ENTERED AT 11:24:13 ON 18 APR 2007

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 11:25:14 ON 18 APR 2007

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 18 Apr 2007 VOL 146 ISS 17
 FILE LAST UPDATED: 16 Apr 2007 (20070416/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> => d bib abs hitind hitstr retable tot l114

L114 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2004:219896 HCAPLUS Full-text

DN 140:238516

TI Battery using anode material including tin

IN Tanizaki, Hiroaki; Omaru, Atsuo

PA Sony Corporation, Japan

SO U.S. Pat. Appl. Publ., 9 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	US 2004053131	A1	20040318	US 2003-664683	20030918 <--
	JP 2004111202	A	20040408	JP 2002-271710	20020918 <--
	JP 3755506	B2	20060315		
	CN 1495941	A	20040512	CN 2003-164820	20030918 <--
PRAI	JP 2002-271710	A	20020918	<--	

AB Provided is a battery with a higher capacity and superior charge-discharge cycle characteristics. A cathode contained in a package can and an anode contained in a package cup are laminated with a separator in between. The separator is impregnated with an electrolyte solution formed by dissolving lithium salt in a solvent. The anode comprises a tin -containing material including metallic tin and an intermetallic compound including tin in the same particle. A higher capacity and superior charge-discharge cycles can be obtained by the tin -containing material.

IC ICM H01M0004-38

ICS H01M0004-62; H01M0004-48

INCL 429218100; 429232000; 429231100

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 56

ST battery anode tin contg intermetallic

IT **Battery anodes**

Heat treatment

Mechanical alloying

Secondary batteries

(battery using anode material including tin)

IT **Carbonaceous** materials (technological products)

RL: MOA (Modifier or additive use); USES (Uses)

(battery using anode material including tin)

IT Atomizing (spraying)

(pneumatic; battery using anode material including tin)

IT Intermetallic compounds

RL: DEV (Device component use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)

(tin-containing; battery using anode material including
 tin)

IT Atomizing (spraying)

(water; battery using anode material including tin)

IT 7440-31-5, Tin, uses 12019-61-3 12019-69-1

12023-00-6 12023-01-7 12297-65-3 12394-61-5

12526-67-9

RL: DEV (Device component use); USES (Uses)

(battery using anode material including tin)

IT 12682-91-6P 55918-93-9P 62186-40-7P 67828-86-8P 70797-67-0P
 70993-37-2P 83746-47-8P 102984-63-4P 146660-29-9P 252231-06-4P
 260805-53-6P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP

(Preparation); USES (Uses)

(battery using anode material including tin)

IT 7782-42-5, Graphite, uses

RL: MOA (Modifier or additive use); USES (Uses)

(battery using anode material including tin)

IT 7440-37-1, Argon, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(battery using anode material including tin)

IT 7440-31-5, Tin, uses 12394-61-5

12526-67-9

RL: DEV (Device component use); USES (Uses)

(battery using anode material including tin)

RN 7440-31-5 HCAPLUS

CN Tin (CA INDEX NAME)

Sn

RN 12394-61-5 HCAPLUS

CN Cobalt, compd. with tin (1:2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Co	1	7440-48-4
Sn	2	7440-31-5

RN 12526-67-9 HCAPLUS

CN Cobalt, compd. with tin (3:2) (7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Co	3	7440-48-4
Sn	2	7440-31-5

IT 7782-42-5, Graphite, uses

RL: MOA (Modifier or additive use); USES (Uses)

(battery using anode material including tin)

RN 7782-42-5 HCAPLUS

CN Graphite (CA INDEX NAME)

C

DN 136:297394
 TI Solid electrolyte cell
 IN Goto, Shuji; Hosoya, Mamoru; Endo, Takahiro
 PA Sony Corporation, Japan
 SO Eur. Pat. Appl., 16 pp.
 CODEN: EPXXDW

DT Patent
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1195826	A2	20020410	EP 2001-123774	20011004 <--
	EP 1195826	A3	20031126		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002117844	A	20020419	JP 2000-306876	20001005 <--
	US 2002094481	A1	20020718	US 2001-966864	20010928 <--
	US 6720113	B2	20040413		
	TW 523952	B	20030311	TW 2001-90124127	20010928 <--
	CN 1349273	A	20020515	CN 2001-139323	20010930 <--
	CA 2358294	A1	20020405	CA 2001-2358294	20011003 <--
PRAI	JP 2000-306876	A	20001005	<--	

AB A solid electrolyte cell in which cell characteristics are not deteriorated even on overdischarge to the cell voltage of 0 V, such that the shape of the cell encapsulated in the laminate film is maintained. The cell includes a cathode containing a compound represented by the general formula $\text{Li}_x\text{Fe}_y\text{M}_z\text{PO}_4$ where $0.05 \leq x \leq 1.2$, $0 \leq y \leq 0.8$, and M is at least one selected from the group consisting of Mn, Cr, Co, Cu, Ni, V, Mo, Ti, Zn, Al, Ga, Mg, B and Nb, an anode and a solid electrolyte. An electrode unit 1 comprised of the cathode and the anode layered together with interposition of the solid electrolyte is encapsulated with a laminate film 2.

IC ICM H01M0004-58
 ICS H01M0010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT Polyoxyalkylenes, uses
 RL: DEV (Device component use); USES (Uses)
 (lithium complex; solid electrolyte cell)

IT Battery cathodes
 Secondary batteries
 (solid electrolyte cell)

IT 7439-93-2D, Lithium, polyethylene oxide complex 7791-03-9,
 Lithium perchlorate 12031-65-1, Lithium nickel oxide
 linio2 12057-17-9, Lithium manganese oxide LiMn_2O_4
 15365-14-7, Iron lithium phosphate FeLiPO_4 25322-68-3D,
 Polyethylene oxide, lithium complex 116327-69-6,
 Cobalt lithium nickel oxide $\text{Co}_{0.1}\text{LiNi}_{0.9}\text{O}_2$
 147812-18-8, Iron lithium manganese oxide $\text{Fe}_{0.05}\text{LiMn}_{1.95}\text{O}_4$
 407606-22-8, Chromium iron lithium phosphate
 $(\text{Cr}_{0.05}\text{Fe}_{0.2}\text{Li}_{0.05}\text{O}_{1.2}(\text{PO}_4))$ 407606-24-0, Cobalt iron
 lithium phosphate $(\text{Co}_{0.05}\text{Fe}_{0.2}\text{Li}_{0.05}\text{O}_{1.2}(\text{PO}_4))$ 407606-26-2,
 Copper iron lithium phosphate $(\text{Cu}_{0.05}\text{Fe}_{0.2}\text{Li}_{0.05}\text{O}_{1.2}(\text{PO}_4))$
 407606-28-4, Aluminum iron lithium phosphate
 $(\text{Al}_{0.05}\text{Fe}_{0.2}\text{Li}_{0.05}\text{O}_{1.2}(\text{PO}_4))$ 407606-30-8, Gallium iron
 lithium phosphate $(\text{Ga}_{0.05}\text{Fe}_{0.2}\text{Li}_{0.05}\text{O}_{1.2}(\text{PO}_4))$
 407606-32-0, Boron iron lithium phosphate
 $(\text{B}_{0.05}\text{Fe}_{0.2}\text{Li}_{0.05}\text{O}_{1.2}(\text{PO}_4))$ 407606-34-2, Iron lithium
 manganese phosphate $(\text{Fe}_{0.2}\text{Li}_{0.05}\text{Mn}_{0.8}\text{O}_{1.2}(\text{PO}_4))$ 407606-36-4, Iron
 lithium nickel phosphate $(\text{Fe}_{0.2}\text{Li}_{0.05}\text{Ni}_{0.8}\text{O}_{1.2}(\text{PO}_4))$
 407606-39-7, Iron lithium vanadium phosphate
 $(\text{Fe}_{0.2}\text{Li}_{0.05}\text{V}_{0.8}\text{O}_{1.2}(\text{PO}_4))$ 407606-42-2, Iron lithium

molybdenum phosphate ($\text{Fe}_{0.2}\text{Li}_{0.05}\text{Mo}_{0.8}(\text{PO}_4)$) 407606-44-4, Iron
 lithium titanium phosphate ($\text{Fe}_{0.2}\text{Li}_{0.05}\text{Ti}_{0.8}(\text{PO}_4)$)
 407606-47-7, Iron lithium zinc phosphate ($\text{Fe}_{0.2}\text{Li}_{0.05}\text{Zn}_{0.8}(\text{PO}_4)$)
 407606-49-9, Iron lithium magnesium phosphate
 ($\text{Fe}_{0.2}\text{Li}_{0.05}\text{Mg}_{0.8}(\text{PO}_4)$) 407606-51-3, Iron lithium
 niobium phosphate ($\text{Fe}_{0.2}\text{Li}_{0.05}\text{Nb}_{0.8}(\text{PO}_4)$) 408331-94-2,
 Cobalt lithium nickel oxide ($(\text{Co},\text{Ni})\text{LiO-2O}_2$)
 408331-95-3, Cobalt lithium manganese oxide ($(\text{Co},\text{Mn})\text{LiO-2O}_2$)
 408331-96-4, Cobalt lithium
 zinc oxide ($(\text{Co},\text{Zn})\text{LiO-2O}_2$) 408331-97-5, Cobalt
 lithium tin oxide ($(\text{Co},\text{Sn})\text{LiO-2O}_2$)
 408331-99-7, Cobalt lithium vanadium oxide ($(\text{Co},\text{V})\text{LiO-2O}_2$)
 408332-00-3, Cobalt lithium
 titanium oxide ($(\text{Co},\text{Ti})\text{LiO-2O}_2$) 408332-01-4, Cobalt
 lithium molybdenum oxide ($(\text{Co},\text{Mo})\text{LiO-2O}_2$) 408332-02-5,
 Cobalt lithium tungsten oxide ($(\text{Co},\text{W})\text{LiO-2O}_2$)
 408332-03-6, Cobalt lithium magnesium oxide ($(\text{Co},\text{Mg})\text{LiO-2O}_2$)
 408332-04-7, Cobalt lithium
 strontium oxide ($(\text{Co},\text{Sr})\text{LiO-2O}_2$) 408332-05-8, Cobalt
 lithium niobium oxide ($(\text{Co},\text{Nb})\text{LiO-2O}_2$) 408332-06-9,
 Cobalt iron lithium oxide ($(\text{Co},\text{Fe})\text{LiO-2O}_2$)
 408332-07-0, Cobalt copper lithium oxide ($(\text{Co},\text{Cu})\text{LiO-2O}_2$)
 408332-08-1, Aluminum cobalt lithium
 oxide ($(\text{Al},\text{Co})\text{LiO-2O}_2$) 408332-09-2, Cobalt
 lithium borate oxide ($\text{CoO-1LiO-2(BO}_2\text{)O-1O}_2$) 408332-10-5
 , Cobalt gallium lithium oxide ($(\text{Co},\text{Ga})\text{LiO-2O}_2$)
 408332-11-6, Chromium cobalt lithium
 oxide ($(\text{Cr},\text{Co})\text{LiO-2O}_2$) 408332-12-7, Calcium cobalt
 lithium oxide ($(\text{Ca},\text{Co})\text{LiO-2O}_2$) 408332-13-8, Iron
 lithium nickel oxide ($(\text{Fe},\text{Ni})\text{LiO-2O}_2$) 408332-14-9, Copper
 lithium nickel oxide ($(\text{Cu},\text{Ni})\text{LiO-2O}_2$) 408332-15-0, Aluminum
 lithium nickel oxide ($(\text{Al},\text{Ni})\text{LiO-2O}_2$) 408332-16-1,
 Lithium nickel borate oxide ($\text{LiO-2NiO-1(BO}_2\text{)O-1O}_2$)
 408332-17-2, Gallium lithium nickel oxide
 ($(\text{Ga},\text{Ni})\text{LiO-2O}_2$) 408332-18-3, Chromium lithium nickel oxide
 ($(\text{Cr},\text{Ni})\text{LiO-2O}_2$) 408332-19-4, Calcium lithium nickel oxide
 ($(\text{Ca},\text{Ni})\text{LiO-2O}_2$) 408332-20-7, Lithium manganese nickel oxide
 ($\text{LiO-2(Mn},\text{Ni})\text{O}_2$) 408332-21-8, Lithium nickel zinc oxide
 ($\text{LiO-2(Ni},\text{Zn})\text{O}_2$) 408332-22-9, Lithium nickel tin
 oxide ($\text{LiO-2(Ni},\text{Sn})\text{O}_2$) 408332-23-0, Lithium nickel
 vanadium oxide ($\text{LiO-2(Ni},\text{V})\text{O}_2$) 408332-24-1, Lithium nickel
 titanium oxide ($\text{LiO-2(Ni},\text{Ti})\text{O}_2$) 408332-25-2, Lithium nickel
 tungsten oxide ($\text{LiO-2(Ni},\text{W})\text{O}_2$) 408332-26-3, Lithium molybdenum
 nickel oxide ($\text{LiO-2(Mo},\text{Ni})\text{O}_2$) 408332-27-4, Lithium magnesium
 nickel oxide ($\text{LiO-2(Mg},\text{Ni})\text{O}_2$) 408332-28-5, Lithium nickel
 strontium oxide ($\text{LiO-2(Ni},\text{Sr})\text{O}_2$) 408332-29-6, Lithium nickel
 niobium oxide ($\text{LiO-2(Ni},\text{Nb})\text{O}_2$) 408332-30-9, Lithium manganese
 nickel oxide ($\text{LiO-2(Mn},\text{Ni})\text{O}_2$) 408332-31-0, Lithium manganese
 zinc oxide ($\text{LiO-2(Mn},\text{Zn})\text{O}_2$) 408332-32-1, Lithium manganese
 tin oxide ($\text{LiO-2(Mn},\text{Sn})\text{O}_2$) 408332-33-2,
 Lithium manganese vanadium oxide ($\text{LiO-2(Mn},\text{V})\text{O}_2$) 408332-34-3,
 Lithium manganese titanium oxide ($\text{LiO-2(Mn},\text{Ti})\text{O}_2$) 408332-35-4,
 Lithium manganese molybdenum oxide ($\text{LiO-2(Mn},\text{Mo})\text{O}_2$)
 408332-36-5, Lithium manganese tungsten oxide ($\text{LiO-2(Mn},\text{W})\text{O}_2$)
 408332-37-6, Lithium magnesium manganese oxide' ($\text{LiO-2(Mg},\text{Mn})\text{O}_2$)
 408332-38-7, Lithium manganese strontium oxide ($\text{LiO-2(Mn},\text{Sr})\text{O}_2$)
 408332-39-8, Lithium manganese niobium oxide ($\text{LiO-2(Mn},\text{Nb})\text{O}_2$)
 408332-40-1, Iron lithium manganese oxide ($(\text{Fe},\text{Mn})\text{LiO-2O}_2$)
 408332-42-3, Cobalt lithium manganese oxide ($(\text{Co},\text{Mn})\text{LiO-2O}_2$)
 408332-44-5, Aluminum lithium

manganese oxide ((Al,Mn)2LiO-2O4) 408332-45-6, Lithium
 manganese borate oxide (LiO-2MnO-2(BO2)O-2O0-4) 408332-46-7,
 Gallium lithium manganese oxide ((Ga,Mn)2LiO-2O4) 408332-47-8,
 Chromium lithium manganese oxide ((Cr,Mn)2LiO-2O4)
 408332-48-9, Calcium lithium manganese oxide ((Ca,Mn)2LiO-2O4)
 408332-58-1, Aluminum cobalt lithium nickel oxide
 (Al0.01Co0.98LiNi0.01O2) 412351-36-1, Iron lithium manganese
 phosphate (Fe0.9LiMn0.1(PO4))

RL: DEV (Device component use); USES (Uses)

(solid electrolyte cell)

IT 96-49-1, Ethylene carbonate 108-32-7, Propylene
 carbonate 7782-42-5, Graphite, uses
 12190-79-3, Cobalt lithium oxide colio2 21324-40-3,
 Lithium hexafluorophosphate 24937-79-9, PvdF
 RL: DEV (Device component use); MOA (Modifier or additive use); USES
 (Uses)

(solid electrolyte cell)

IT 407606-30-8, Gallium iron lithium phosphate
 (GaO-0.8FeO.2-1LiO.05-1.2(PO4)) 407606-32-0, Boron iron
 lithium phosphate (BO-0.8FeO.2-1LiO.05-1.2(PO4))
 408332-09-2, Cobalt lithium borate oxide
 (CoO-1LiO-2(BO2)O-1O0-2) 408332-10-5, Cobalt gallium
 lithium oxide ((Co,Ga)LiO-2O2) 408332-16-1,
 Lithium nickel borate oxide (LiO-2NiO-1(BO2)O-1O0-2)
 408332-17-2, Gallium lithium nickel oxide
 ((Ga,Ni)LiO-2O2) 408332-45-6, Lithium manganese borate
 oxide (LiO-2MnO-2(BO2)O-2O0-4) 408332-46-7, Gallium
 lithium manganese oxide ((Ga,Mn)2LiO-2O4)

RL: DEV (Device component use); USES (Uses)

(solid electrolyte cell)

RN 407606-30-8 HCAPLUS

CN Gallium iron lithium phosphate (GaO-0.8FeO.2-1LiO.05-1.2(PO4)) (9CI) (CA
 INDEX NAME)

Component	Ratio	Component
		Registry Number
=====	=====	=====
O4P	1	14265-44-2
Ga	0 - 0.8	7440-55-3
Li	0.05 - 1.2	7439-93-2
Fe	0.2 - 1	7439-89-6

RN 407606-32-0 HCAPLUS

CN Boron iron lithium phosphate (BO-0.8FeO.2-1LiO.05-1.2(PO4)) (9CI) (CA
 INDEX NAME)

Component	Ratio	Component
		Registry Number
=====	=====	=====
O4P	1	14265-44-2
B	0 - 0.8	7440-42-8
Li	0.05 - 1.2	7439-93-2
Fe	0.2 - 1	7439-89-6

RN 408332-09-2 HCAPLUS

CN Cobalt lithium borate oxide (CoO-1LiO-2(BO2)O-1O0-2) (9CI) (CA INDEX
 NAME)

Component	Ratio	Component
		Registry Number

Component	Ratio	Component Registry Number
O	0 - 2	17778-80-2
BO2	0 - 1	14100-65-3
Co	0 - 1	7440-48-4
Li	0 - 2	7439-93-2

RN 408332-10-5 HCAPLUS

CN Cobalt gallium lithium oxide ((Co,Ga)LiO-2O2) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2	17778-80-2
Ga	0 - 1	7440-55-3
Co	0 - 1	7440-48-4
Li	0 - 2	7439-93-2

RN 408332-16-1 HCAPLUS

CN Lithium nickel borate oxide (LiO-2NiO-1(BO2)O-1O0-2) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0 - 2	17778-80-2
BO2	0 - 1	14100-65-3
Ni	0 - 1	7440-02-0
Li	0 - 2	7439-93-2

RN 408332-17-2 HCAPLUS

CN Gallium lithium nickel oxide ((Ga,Ni)LiO-2O2) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2	17778-80-2
Ga	0 - 1	7440-55-3
Ni	0 - 1	7440-02-0
Li	0 - 2	7439-93-2

RN 408332-45-6 HCAPLUS

CN Lithium manganese borate oxide (LiO-2MnO-2(BO2)O-2O0-4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0 - 4	17778-80-2
BO2	0 - 2	14100-65-3
Mn	0 - 2	7439-96-5
Li	0 - 2	7439-93-2

RN 408332-46-7 HCAPLUS

CN Gallium lithium manganese oxide ((Ga,Mn)2LiO-2O4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Ga	0 - 2	7440-55-3

Mn | 0 - 2 | 7439-96-5
 Li | 0 - 2 | 7439-93-2

IT 7782-42-5, Graphite, uses
 RL: DEV (Device component use); MOA (Modifier or additive use); USES
 (Uses)
 (solid electrolyte cell)
 RN 7782-42-5 HCAPLUS
 CN Graphite (CA INDEX NAME)

C

L114 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN
 AN 2002:256757 HCAPLUS Full-text
 DN 136:282003
 TI Lithium-based cathode active materials for rechargeable
 lithium battery and preparation thereof
 IN Barker, Jeremy; Saidi, M. Yazid; Swoyer, Jeffrey L.
 PA Valence Technology, Inc., UK
 SO U.S. Pat. Appl. Publ., 39 pp., Cont.-in-part of U. S. Ser. No. 484,799.
 CODEN: USXXCO

DT Patent
 LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002039687	A1	20020404	US 2001-908480	20010718 <--
	US 6723470	B2	20040420		
	US 2003129492	A1	20030710	US 2000-484799	20000118 <--
	US 7001690	B2	20060221		
	CA 2460875	A1	20010726	CA 2000-2460875	20001222 <--
	WO 2001054212	A1	20010726	WO 2000-US35302	20001222 <--
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,				
	CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,				
	HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,				
	LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,				
	SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,				
	YU, ZA, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,				
	DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,				
	BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1309021	A2	20030507	EP 2003-2687	20001222 <--
	EP 1309021	A3	20030903		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				
	IE, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2003223893	A	20030808	JP 2002-362497	20001222 <--
	US 2007065724	A1	20070322	US 2006-355584	20060216 <--
PRAI	US 2000-484799	A2	20000118	<--	
	WO 2000-US35302	W	20001222	<--	
	CA 2000-2394318	A3	20001222	<--	
	EP 2000-993800	A3	20001222	<--	
	JP 2001-553602	A3	20001222	<--	
	US 2005-907880	A1	20050419		

AB The invention provides novel lithium-mixed metal materials which, upon electrochem. interaction, release lithium ions, and are capable of reversibly cycling lithium ions. The invention provides a rechargeable lithium battery

which comprises an electrode formed from the novel lithium-mixed metal materials. Methods for making the novel lithium-mixed metal materials and methods for using such lithium-mixed metal materials in electrochem. cells are also provided. The lithium-mixed metal materials comprise lithium and at least one other metal besides lithium. Preferred materials are lithium-mixed metal phosphates which contain lithium and two other metals besides lithium.

IC ICM H01M0004-58

ICS C01B0025-45

INCL 429231950

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST battery cathode lithium based active material

IT Battery cathodes

(lithium-based cathode active materials for rechargeable lithium battery and preparation thereof)

IT Olivine-group minerals

RL: DEV (Device component use); USES (Uses)

(lithium-based cathode active materials for rechargeable lithium battery and preparation thereof)

IT Secondary batteries

(lithium; lithium-based cathode active materials for rechargeable lithium battery and preparation thereof)

IT 405914-52-5, Cobalt lithium magnesium phosphate ((Co,Mg)Li(PO₄)) 405914-53-6, Cobalt lithium magnesium phosphate (Co_{0.9}LiMg_{0.1}(PO₄)) 405914-58-1, Cobalt lithium magnesium phosphate (Co_{0.95}LiMg_{0.05}(PO₄)) 405914-63-8 405914-68-3, Calcium cobalt lithium phosphate ((Ca,Co)Li(PO₄)) 405914-73-0, Calcium cobalt lithium phosphate (Ca_{0.1}Co_{0.9}Li(PO₄)) 405914-83-2, Cobalt lithium zinc phosphate ((Co,Zn)Li(PO₄)) 405914-88-7, Cobalt lithium zinc phosphate (Co_{0.9}LiZn_{0.1}(PO₄)) 405914-93-4, Cobalt lithium strontium phosphate ((Co,Sr)Li(PO₄)) 405914-98-9, Cobalt lead lithium phosphate ((Co,Pb)Li(PO₄)) 405915-04-0, Cadmium cobalt lithium phosphate ((Cd,Co)Li(PO₄)) 405915-09-5, Cobalt lithium tin phosphate ((Co,Sn)Li(PO₄)) 405915-14-2, Barium cobalt lithium phosphate ((Ba,Co)Li(PO₄)) 405915-21-1, Beryllium cobalt lithium phosphate ((Be,Co)Li(PO₄)) 405915-29-9, Cobalt lithium magnesium phosphate (Co_{0.5-1}LiMg_{0-0.5}(PO₄)) 405915-34-6, Cobalt lithium magnesium phosphate (Co_{0.8-1}LiMg_{0-0.2}(PO₄)) 405915-39-1, Calcium cobalt lithium phosphate (Ca_{0-0.5}Co_{0.5-1}Li(PO₄)) 405915-44-8, Calcium cobalt lithium phosphate (Ca_{0-0.2}Co_{0.8-1}Li(PO₄)) 405915-48-2, Cobalt lithium zinc phosphate (Co_{0.5-1}LiZn_{0-0.5}(PO₄)) 405915-51-7, Cobalt lithium zinc phosphate (Co_{0.8-1}LiZn_{0-0.2}(PO₄)) 405915-56-2, Cobalt lithium strontium phosphate (Co_{0.5-1}LiSr_{0-0.5}(PO₄)) 405915-59-5, Cobalt lithium strontium phosphate (Co_{0.8-1}LiSr_{0-0.2}(PO₄)) 405915-63-1, Cobalt lead lithium phosphate (Co_{0.5-1}Pb_{0-0.5}Li(PO₄)) 405915-66-4, Cobalt lead lithium phosphate (Co_{0.8-1}Pb_{0-0.2}Li(PO₄)) 405915-69-7, Cadmium cobalt lithium phosphate (Cd_{0-0.5}Co_{0.5-1}Li(PO₄)) 405915-79-9, Cadmium cobalt lithium phosphate (Cd_{0-0.2}Co_{0.8-1}Li(PO₄)) 405915-82-4, Cobalt lithium tin phosphate (Co_{0.8-1}LiSn_{0-0.2}(PO₄)) 405915-85-7, Cobalt lithium tin phosphate (Co_{0.95-1}LiSn_{0-0.05}(PO₄)) 405915-88-0, Cobalt lithium tin phosphate

(Co_{0.5}-1LiSn_{0.5}(PO₄)) 405915-90-4, Barium cobalt lithium phosphate (Ba_{0.5}Co_{0.5}-1Li(PO₄)) 405915-92-6, Barium cobalt lithium phosphate (Ba_{0.2}Co_{0.8}-1Li(PO₄)) 405915-94-8, Beryllium cobalt lithium phosphate (Be_{0.5}Co_{0.5}-1Li(PO₄)) 405915-96-0, Beryllium cobalt lithium phosphate (Be_{0.2}Co_{0.8}-1Li(PO₄))

RL: DEV (Device component use); USES (Uses)

(lithium-based cathode active materials for rechargeable lithium battery and preparation thereof)

IT 84159-18-2P, Lithium vanadium phosphate Li₃V₂(PO₄)₃
349632-76-4P, Iron lithium magnesium phosphate (Fe_{0.9}LiMg_{0.1}(PO₄)) 349632-79-7P, Calcium iron lithium phosphate (Ca_{0.1}Fe_{0.9}Li(PO₄)) 349632-82-2P, Iron lithium zinc phosphate (Fe_{0.9}LiZn_{0.1}(PO₄))
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(lithium-based cathode active materials for rechargeable lithium battery and preparation thereof)

IT 405915-04-0, Cadmium cobalt lithium phosphate ((Cd,Co)Li(PO₄)) 405915-69-7, Cadmium cobalt lithium phosphate (Cd_{0.5}Co_{0.5}-1Li(PO₄)) 405915-79-9, Cadmium cobalt lithium phosphate (Cd_{0.2}Co_{0.8}-1Li(PO₄))

RL: DEV (Device component use); USES (Uses)

(lithium-based cathode active materials for rechargeable lithium battery and preparation thereof)

RN 405915-04-0 HCAPLUS

CN Cadmium cobalt lithium phosphate ((Cd,Co)Li(PO₄)) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4P	1	14265-44-2
Co	0 - 1	7440-48-4
Cd	0 - 1	7440-43-9
Li	1	7439-93-2

RN 405915-69-7 HCAPLUS

CN Cadmium cobalt lithium phosphate (Cd_{0.5}Co_{0.5}-1Li(PO₄)) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4P	1	14265-44-2
Co	0.5 - 1	7440-48-4
Cd	0 - 0.5	7440-43-9
Li	1	7439-93-2

RN 405915-79-9 HCAPLUS

CN Cadmium cobalt lithium phosphate (Cd_{0.2}Co_{0.8}-1Li(PO₄)) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4P	1	14265-44-2
Co	0.8 - 1	7440-48-4
Cd	0 - 0.2	7440-43-9
Li	1	7439-93-2

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
=====	=====	=====	=====	=====	=====
Amine, K	2000	14	133	8 V and 2 V positive	
Amine, K	2000	3	178	Electrochem. Solid-S	HCAPLUS
Andersson	2000	130	41	Solid State Ionics	HCAPLUS
Andersson, A	2000	3	66	Electrochem. Solid-S	HCAPLUS
Anon	1992			DE 4024409 A1	HCAPLUS
Anon	1992			DE 4024409 A	HCAPLUS
Anon	1993			CA 2096386	HCAPLUS
Anon	1993			JP 52999101	
Anon	1993			JP 5325961	
Anon	1993			EP 571858 B1	HCAPLUS
Anon	1995			WO 9512900	HCAPLUS
Anon	1996			JP 08171938	HCAPLUS
Anon	1997			JP 09134724 A	HCAPLUS
Anon	1997			JP 09134725	HCAPLUS
Anon	1997			JP 09171827	HCAPLUS
Anon	1997			JP 9134724	
Anon	1997			WO 9740541	HCAPLUS
Anon	1998			CA 2200998	HCAPLUS
Anon	1999			JP 11025983	HCAPLUS
Anon	1999			JP 11025983 A	HCAPLUS
Anon	1999			EP 11111295	
Anon	2000			EP 1049182 A2	HCAPLUS
Anon	2000			JP 2000294238	HCAPLUS
Anon	2000			JP WO200060680	
Anon	2001			JP 2001052733	HCAPLUS
Anon	2001			JP 2001085010	HCAPLUS
Anon	2001			JP 2001110414	HCAPLUS
Anon	2001			JP 2001110455	HCAPLUS
Armand	2003			US 6514640 B1	HCAPLUS
Barker	1999			US 5871866 A	HCAPLUS
Barker	2000			US 6153333 A	HCAPLUS
Best, A	1998	34	236	J. Australas. Ceram.	HCAPLUS
Boutinaud, P	1996	6	381	J. Mater. Chem	HCAPLUS
Butt, G	1998	34	60	J. Australas. Ceram.	HCAPLUS
Chung	2002	1	123	Nature Materials	HCAPLUS
Cocciantelli, J	1995	78	143	Solid State Ionics	HCAPLUS
Delmas, C	1994	69	257	Solid Ionics	HCAPLUS
Garcia-Alvarado, F	2000	39	239	Bol. Soc. Esp. Ceram	HCAPLUS
Goni	1998	84		Journal of Applied P	HCAPLUS
Gopalakrishana, J	1992	4	24332	Chemistry of Materia	
Kamauchi	1996			US 5538814 A	HCAPLUS
Labat	1993			US 5219677 A	HCAPLUS
Lutsko, V	1990	51-52	97	Phosphorus, Sulfur S	HCAPLUS
Martinez-Juarez	1998	102	372	J. Phys, Chem B	HCAPLUS
Nanjundaswamy, K	1996	92	1	Solid State Ionics	HCAPLUS
Okada, S	2000	14	133	Cathodes properties	HCAPLUS
PCT Search Authority				International Search	
Padhi, A	1997	144	1188	J. Electrochem. Soc	HCAPLUS
Padhi, A	1997	144	1609	J. Electrochem. Soc	HCAPLUS
Vaknin	1999	60	1100	Phys. Rev. B: Conden	HCAPLUS
Walk	1996			US 5496663 A	HCAPLUS
Walk	1996			US 5567548 A	HCAPLUS

DN 135:245002
 TI Copper-based anode material for nonaqueous electrolyte secondary battery
 by electroplating
 IN Ohara, Shuji; Ishida, Shintaro
 PA Mitsui Mining and Smelting Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DT **Patent**
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001256968	A	20010921	JP 2000-69421	20000313 <--
PRAI	JP 2000-69421		20000313	<--	

AB The anode material comprises a Cu foil electroplated with alloys. The anode material is manufactured by electroplating of a Cu foil, followed by heating to form intermetallic compds. The anode material gives batteries with high capacity and high-rate performance.
 IC ICM **H01M0004-02**
 ICS C25D0005-50; C25D0007-06; **H01M0004-38**; **H01M0010-40**
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 56
 IT **Battery anodes**
 Electrodeposition
 Secondary batteries
 (manufacture of copper-based anode material for nonaq. electrolyte secondary battery by electroplating)
 IT 7440-02-0P, Nickel, uses **7440-31-5P**, Tin, uses
 7440-36-0P, Antimony, uses 7440-66-6P, Zinc, uses 11110-83-1P
 11143-56-9P 11146-70-6P 12202-01-6P 12797-46-5P **39286-52-7P**
 39460-45-2P 50941-27-0P 51636-79-4P 54342-36-8P 77885-23-5P
 88872-71-3P 361144-76-5P 361144-77-6P
 RL: DEV (Device component use); PNU (Preparation, unclassified); TEM
 (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (manufacture of copper-based anode material for nonaq. electrolyte secondary battery by electroplating)
 IT 12297-65-3 **12394-61-5**
 RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
 (manufacture of copper-based anode material for nonaq. electrolyte secondary battery by electroplating)
 IT **7440-31-5P**, Tin, uses **39286-52-7P**
 RL: DEV (Device component use); PNU (Preparation, unclassified); TEM
 (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (manufacture of copper-based anode material for nonaq. electrolyte secondary battery by electroplating)
 RN 7440-31-5 HCAPLUS
 CN Tin (CA INDEX NAME)

Sn

RN 39286-52-7 HCAPLUS
 CN Cobalt alloy, nonbase, Co, Sn (CA INDEX NAME)

Component Component
Registry Number

```
=====+=====
Co          7440-48-4
Sn          7440-31-5
```

IT 12394-61-5

RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(manufacture of copper-based anode material for nonaq. electrolyte
secondary

battery by electroplating)

RN 12394-61-5 HCAPLUS

CN Cobalt, compd. with tin (1:2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Co	1	7440-48-4
Sn	2	7440-31-5

L114 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2001:377176 HCAPLUS Full-text

DN 134:355496

TI Secondary nonaqueous electrolyte batteries

IN Kajiura, Hisashi; Yamaura, Kiyoshi

PA Sony Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese33333339

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001143701	A	20010525	JP 1999-325940	19991116 <--
PRAI	JP 1999-325940		19991116	<--	

AB The batteries have Li intercalating electrodes and nonaq. electrolyte solution, where the anode active mass contains a Li alloying alloy phase and a Li nonalloying alloy phases. The alloying phase is preferably CoSn, CoSn₂, Co₃Sn₂, Ni₃Sn₄, Ni₃Sn₂, and/or Ni₃Sn; and the nonalloying phase is Co₃SnC_{0.7}, Co₂C, Co₃C, and/or Ni₃C.

IC ICM H01M0004-40

ICS H01M0004-02; H01M0010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary lithium battery anode alloy compn; lithium alloying nonalloying phase battery anode alloy; cobalt tin alloy lithium battery anode; nickel tin alloy lithium battery anode; carbon metal alloy lithium battery anode

IT Battery anodes

(anodes from alloys containing lithium alloying and nonalloying phases for secondary lithium batteries)

IT 7439-93-2, Lithium, uses 12011-59-5, Cobalt carbide (Co₃C) 12012-02-1, Nickel carbide (Ni₃C) 12059-23-3 12059-24-4 12192-29-9, Cobalt carbide (Co₂C) 12202-01-6 12297-65-3 12394-61-5 12526-67-9 339334-52-0, Cobalt tin carbide (Co₃SnC_{0.7})

RL: DEV (Device component use); USES (Uses)

(anodes from alloys containing lithium alloying and nonalloying phases for secondary lithium batteries)

IT 12394-61-5 12526-67-9

RL: DEV (Device component use); USES (Uses)

(anodes from alloys containing lithium alloying and nonalloying phases for secondary lithium batteries)

RN 12394-61-5 HCAPLUS

CN Cobalt, compd. with tin (1:2) (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
Co	1	7440-48-4
Sn	2	7440-31-5

RN 12526-67-9 HCAPLUS

CN Cobalt, compd. with tin (3:2) (7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
Co	3	7440-48-4
Sn	2	7440-31-5

=> d bib abs hitind hitstr retable tot 1115

L115 ANSWER 1 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1998:118257 HCAPLUS Full-text

DN 128:233657

TI Co-Sn intermetallic phases and their formation at the Co/Sn interface studied with perturbed angular correlation (PAC) method

AU Wodniecki, P.; Wodniecka, B.; Kulinska, A.; Hryniewicz, A. Z.

CS Henryk Niewodniczanski Institute of Nuclear Physics, Krakow, 31-342, Pol.

SO Journal of Alloys and Compounds (1998), 264(1-2), 14-18

CODEN: JALCEU; ISSN: 0925-8388

PB Elsevier Science S.A.

DT Journal

LA English

AB Cobalt-tin intermetallic compds. of different stoichiometries were studied by means of the perturbed angular correlation (PAC) technique. The hyperfine interaction parameters for ^{111}Cd probes in the crystal lattices of CoSn_2 and Co_3Sn_2 were determined. A $T^{3/2}$ temperature dependence of the elec. field gradient (EFG) in CoSn_2 compound was found. Due to the thermal interdiffusion in a bilayer Co/Sn sample the formation of the stoichiometric CoSn phase was observed

CC 56-8 (Nonferrous Metals and Alloys)

ST cobalt tin intermetallic pptn interface

IT Diffusion

Interface

Magnetic hyperfine field

(Co-Sn intermetallic phases and their formation at the Co/Sn interface studied with perturbed angular correlation (PAC) method)

IT Intermetallic compounds

RL: PRP (Properties)

(Co-Sn intermetallic phases and their formation at the Co/Sn interface studied with perturbed angular correlation (PAC) method)

IT 12297-65-3 12394-61-5 12526-67-9

RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process)

(Co-Sn intermetallic phases and their formation at the Co/Sn interface studied with perturbed angular correlation (PAC) method)

IT 7440-31-5, Tin, properties 7440-48-4, Cobalt, properties

RL: PRP (Properties)

(Co-Sn intermetallic phases and their formation at the Co/Sn interface studied with perturbed angular correlation (PAC) method)

IT 12394-61-5 12526-67-9

RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process)

(Co-Sn intermetallic phases and their formation at the Co/Sn interface studied with perturbed angular correlation (PAC) method)

RN 12394-61-5 HCAPLUS

CN Cobalt, compd. with tin (1:2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Co	1	7440-48-4
Sn	2	7440-31-5

RN 12526-67-9 HCAPLUS

CN Cobalt, compd. with tin (3:2) (7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Co	3	7440-48-4
Sn	2	7440-31-5

IT 7440-31-5, Tin, properties

RL: PRP (Properties)

(Co-Sn intermetallic phases and their formation at the Co/Sn interface studied with perturbed angular correlation (PAC) method)

RN 7440-31-5 HCAPLUS

CN Tin (CA INDEX NAME)

Sn

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Behar, M	1983	15/16	261	Hyp Int	
Beraud, R	1969	69	41	Nucl Instr and Meth	
Christiansen, J	1993			Hyperfine Interactio	
Christiansen, J	1976	B24	177	Z Phys	
Frauenfelder, H	1963			Perturbed Angular Co	
Haas, H	1973	58	3339	J Chem Phys	HCAPLUS
Kajfosz, J	1973			Institute of Nuclear	
Lindgren, B	1978	18	26	Physica Scripta	HCAPLUS

Lis, S	1978	5	445	Hyp Int	HCAPLUS
Massalski, T	1987			Binary Alloys Phase	
Platzer, R	1990	60	1003	Hyp Int	HCAPLUS
Torgeson, D	1976	37	956	Phys Rev Lett	HCAPLUS
Uhrmacher, M	1993	A57	353	Appl Physics	HCAPLUS
Vianden, R	1979	7	247	Hyp Int	HCAPLUS
Vianden, R	1981	10	956	Hyp Int	
Villars, P	1991			Pearson's Handbook o	
Wesche, R	1986		24	Jahresbericht Konsta	
Wodniecka, B	1993	80	1039	Hyp Int	HCAPLUS
Wodniecka, B				Hyp Int in press	
Wodniecki, P	1995	88	333	Acta Phys Pol	HCAPLUS
Wodniecki, P	1993	80	1033	Hyp Int	HCAPLUS
Wodniecki, P	1993	78	319	Hyp Int	HCAPLUS

L115 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1998:51606 HCAPLUS Full-text

DN 128:160800

TI Organic electroluminescent device elements

IN Kanai, Hiroyuki

PA Mitsubishi Chemical Industries Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 10012381	A	19980116	JP 1996-158320	19960619 <--
PRAI	JP 1996-158320		19960619	<--	
AB	The elements, suitable for use in display devices, comprise a cathode, containing an alloy consisting of Mg, Li (0.002-2 atomic %) and a metal (1-30 atomic %) having a work function > 4 eV selected from Ag, Al, In, Cr, Mn, Ni, Co, Sn and Cu.				
IC	ICM H05B0033-14				
CC	73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)				
ST	aluminum magnesium lithium cathode electroluminescent device; indium magnesium lithium cathode electroluminescent device; chromium magnesium lithium cathode electroluminescent device; manganese magnesium lithium cathode electroluminescent device; nickel magnesium lithium cathode electroluminescent device; cobalt magnesium lithium cathode electroluminescent device; tin magnesium lithium cathode electroluminescent device; silver magnesium lithium cathode electroluminescent device; copper magnesium lithium cathode electroluminescent device				
IT	147-14-8	2085-33-8,	Tris(8-quinolinolato)aluminum	39348-03-3	
	57921-20-7,	Silver alloy, Ag, Li, Mg	123847-85-8		
	202531-34-8	202531-35-9	202531-36-0	202531-37-1	
	202531-38-2	202531-39-3	202531-40-6	202531-41-7	202531-42-8
	RL: DEV (Device component use); USES (Uses) (organic electroluminescent devices)				
IT	57921-20-7,	Silver alloy, Ag, Li, Mg	202531-34-8		
	RL: DEV (Device component use); USES (Uses) (organic electroluminescent devices)				
RN	57921-20-7	HCAPLUS			
CN	Silver alloy, nonbase, Ag, Li, Mg (9CI) (CA INDEX NAME)				

Component Component

Registry Number

```

=====+=====
Ag      7440-22-4
Li      7439-93-2
Mg      7439-95-4

```

RN 202531-34-8 HCAPLUS

CN Magnesium alloy, base, Mg 73,Ag 27,Li 0.1 (9CI) (CA INDEX NAME)

```

Component      Component      Component
                Percent      Registry Number
=====+=====
Mg              73              7439-95-4
Ag              27              7440-22-4
Li              0.1             7439-93-2

```

L115 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1988:477838 HCAPLUS Full-text

DN 109:77838

TI Moessbauer spectroscopy study of ion-beam alloying of metal layers containing **tin**

AU Nagy Czako, Ilona; Vertes, Attila; Prinzipi, Giovanni; Tosello, Cristiana; Gratton, Luigi M.

CS Magkem. Lab., ELTE, Budapest, Hung.

SO Kemiai Kozlemenyek (1986), 66(1-2), 30-41

CODEN: KEKOAS; ISSN: 0022-9814

DT Journal

LA Hungarian

AB Moessbauer spectroscopy was used to study the effect of **Sn** ion beam irradiation on the phase composition of a **Co-Sn** electroplate and structure of Al and Ni substrates. Formation of the γ -**Co₃Sn₂** phase occurred on a **Co-Sn** electroplate after ion-beam irradiation Alloying of Ni by ion implantation with **Sn** led to formation of substituted Ni₃Sn and Ni₃Sn₂ intermetallic compds.

CC 56-7 (Nonferrous Metals and Alloys)

Section cross-reference(s): 72

ST **tin** ion implantation nickel intermetallic; **cobalt tin** electroplate implantation **tin**; aluminum implantation **tin** ion

IT 75349-09-6P

RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in **cobalt-tin** alloy electroplate by ion beam irradiation)

IT 12059-23-3P 12059-24-4P

RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in **tin** ion-implanted nickel)

IT 7440-31-5, Tin, properties

RL: PRP (Properties)
(ion implantation of, in **cobalt-tin** alloy electroplates and nickel, intermetallic compound formation by)

IT 7429-90-5, Aluminum, uses and miscellaneous

RL: USES (Uses)
(ion implantation of, with **tin**)

IT 39286-52-7

RL: USES (Uses)
(**tin** ion beam irradiation of **electrodeposited**, intermetallic compound formation in)

IT 7440-02-0, Nickel, properties

RL: PRP (Properties)
(**tin** ion implantation of, intermetallic compound formation in)

IT 7440-31-5, Tin, properties
 RL: PRP (Properties)
 (ion implantation of, in cobalt-tin alloy
 electroplates and nickel, intermetallic compound formation by)
 RN 7440-31-5 HCAPLUS
 CN Tin (CA INDEX NAME)

Sn

IT 39286-52-7
 RL: USES (Uses)
 (tin ion beam irradiation of electrodeposited,
 intermetallic compound formation in)
 RN 39286-52-7 HCAPLUS
 CN Cobalt alloy, nonbase, Co,Sn (CA INDEX NAME)

Component	Component Registry Number
Co	7440-48-4
Sn	7440-31-5

L115 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1985:189185 HCAPLUS Full-text

DN 102:189185

TI The thermodynamic properties of solid cobalt-tin
 alloys

AU Coemert, H.; Pratt, J. N.

CS Dep. Metall. Mater., Univ. Birmingham, Birmingham, B15 2TT, UK

SO Thermochimica Acta (1985), 84, 273-86

CODEN: THACAS; ISSN: 0040-6031

DT Journal

LA English

AB Reversible potentials of galvanic cells of the form Pt|(Co- Sn)(alloy) +
 SnO₂|ZrO₂ + CaO|O₂(air)/Pt were measured at 873-1323 K. The results were used
 to derive the thermodyn. activities and the partial and integral free energies,
 enthalpies, and entropies of formation of the γ , γ' , CoSn [12297-65-3], and
 CoSn₂ [12394-61-5] intermediate phases. Exothermic heats of formation and
 neg. entropies of formation were observed throughout the system. The
 enthalpies of formation were compared with independent calorimetric and theor.
 values, and underlying factors influencing their values were considered. The
 possible contributions to the entropies of formation of the solid phases are
 discussed and their Debye temps. are estimated; θ_D values of approx. 273, 256,
 and 169 K are suggested for Co₃Sn₂ [12526-67-9] (γ), CoSn, and CoSn₂, resp.

CC 56-8 (Nonferrous Metals and Alloys)

Section cross-reference(s): 68, 69

ST cobalt tin thermodyn; intermetallic cobalt
 tin thermodyn; activity cobalt tin; enthalpy
 cobalt tin; entropy cobalt tin; free
 energy cobalt tin; debye temp cobalt
 tin

IT Heat of alloying
 (of cobalt, with tin)

IT Activity
 Debye temperature

(of **cobalt-tin** alloys)
 IT Thermodynamics
 (of **cobalt-tin** alloys, solid)
 IT 7440-31-5, properties
 RL: PRP (Properties)
 (systems, **cobalt-**, thermodyn. of)
 IT 7440-48-4, properties
 RL: PRP (Properties)
 (systems, **tin-**, thermodyn. of)
 IT 12297-65-3 12394-61-5 12526-67-9
 RL: PRP (Properties)
 (thermodyn. properties of)
 IT 7440-31-5, properties
 RL: PRP (Properties)
 (systems, **cobalt-**, thermodyn. of)
 RN 7440-31-5 HCAPLUS
 CN Tin. (CA INDEX NAME)

Sn

IT 12394-61-5 12526-67-9
 RL: PRP (Properties)
 (thermodyn. properties of)
 RN 12394-61-5 HCAPLUS
 CN Cobalt, compd. with tin (1:2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Co	1	7440-48-4
Sn	2	7440-31-5

RN 12526-67-9 HCAPLUS
 CN Cobalt, compd. with tin (3:2) (7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Co	3	7440-48-4
Sn	2	7440-31-5

L115 ANSWER 5 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1984:600178 HCAPLUS Full-text

DN 101:200178

TI Structural studies of **electrodeposited tin-**
cobalt alloys

AU Jaen, J.; Varsanyi, M. L.; Kovacs, E.; Czako-Nagy, I.; Buzas, A.; Vertes, A.; Kiss, L.

CS Dep. Phys. Chem. Radiol., L. Eotvos Univ., Budapest, H-1088, Hung.

SO Electrochimica Acta (1984), 29(8), 1119-22

CODEN: ELCAAV; ISSN: 0013-4686

DT Journal

LA English

AB The cast **Sn-Co** alloys γ' **Co₃Sn₂**

(hexagonal) and **CoSn₂** (tetragonal) were prepared and studied by using Moessbauer and x-ray measurements. These results were used in the

identification of the components of **electrodeposited Sn -Co** alloys obtained from mildly alkaline sulfate baths. The γ' -Co₃Sn₂ (hexagonal), CoSn (cubic) and metallic Sn were detected as components of the **electrodeposited** alloys. The relative amts. of the components is highly dependent on the bath operation conditions, and no γ' -Co₃Sn₂ was observed when the concentration of electroactive Sn in the plating bath was high. The Moessbauer parameters of all the studied alloys are given and are well within the observed values for binary Sn alloys.

CC 72-8 (Electrochemistry)
 Section cross-reference(s): 68, 73, 78, 79
 ST **tin cobalt** alloy **electrodeposit** structure;
 Moessbauer effect **tin cobalt** intermetallic;
 intermetallic **tin cobalt** prepn Moessbauer
 IT Electrolytic polarization
 (in **cobalt-tin** alloy deposition on nickel-plated
 copper substrate in sulfate baths)
 IT Moessbauer effect
 (of **cobalt-tin electrodeposited** alloys)
 IT 7440-31-5P, preparation
 RL: PREP (Preparation)
 (isolation of, in **cobalt-tin**
electrodeposited alloy)
 IT 12526-67-9P 67828-86-8P
 RL: PREP (Preparation)
 (preparation of, from powdered metals, Moessbauer spectra in relation to)
 IT 7440-31-5P, preparation
 RL: PREP (Preparation)
 (isolation of, in **cobalt-tin**
electrodeposited alloy)
 RN 7440-31-5 HCAPLUS
 CN Tin (CA INDEX NAME)

Sn

IT 12526-67-9P
 RL: PREP (Preparation)
 (preparation of, from powdered metals, Moessbauer spectra in relation to)
 RN 12526-67-9 HCAPLUS
 CN Cobalt, compd. with tin (3:2) (7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Co	3	7440-48-4
Sn	2	7440-31-5

L115 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN
 AN 1981:127479 HCAPLUS Full-text
 DN 94:127479
 TI X-ray spectral study of electronic structure of layered **cobalt-tin** (CoSn, Co₃Sn₂, and CoSn₂)
 AU Nemoshkalenko, V. V.; Uvarov, V. N.; Litvin, E. G.; Nagornyi, V. Ya.; Yatsenko, V. A.; Barabash, O. M.
 CS Inst. Metallofiz., Kiev, USSR
 SO Metallofizika (Kiev) (1980), 2(6), 42-6

CODEN: MANFDD; ISSN: 0204-3580

DT Journal

LA Russian

AB The binding energy of Co 2p_{3/2} in the compds. is 777.5, 777.5, and 777.4 eV, resp., as compared to that of pure Co 778.28 eV. This reveals a transfer of electronic d. from Sn to Co atoms, resulting in a donor-acceptor Sn-Co bond. One can consider the Sn layer as a 2-dimensional long ligand of Co. The binding energies of Sn reflect the retention of the initial valent-electron structure of Sn in the layers.

CC 65-1 (General Physical Chemistry)

ST electronic structure cobalt tin; binding energy
cobalt tin compd

IT Ionization potential and energy
(of cobalt in cobalt tin compds.)

IT Energy level
(of cobalt tin compds., ESCA in study of)

IT Bond
(cobalt-tin, in cobalt tin
compds., donor-acceptor)

IT 12297-65-3 12394-61-5 76797-60-9

RL: PRP (Properties)
(electronic structure of, ESCA in study of)

IT 12394-61-5
RL: PRP (Properties)
(electronic structure of, ESCA in study of)

RN 12394-61-5 HCAPLUS

CN Cobalt, compd. with tin (1:2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Co	1	7440-48-4
Sn	2	7440-31-5

L115 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1973:23135 HCAPLUS Full-text

DN 78:23135

TI **Electrodeposited bright tin-cobalt**
intermetallic compound, CoSn [cobalt-tin]

AU Clarke, M.; Elbourne, R. G.; MacKay, C. A.

CS Dep. Metall. Mater., City London Polytech., London, UK

SO Transactions of the Institute of Metal Finishing (1972), 50(4),
160-3

CODEN: TIMFA2; ISSN: 0020-2967

DT Journal

LA English

AB The Co analog of electrodeposited NiSn was plated from an acid fluoride bath. Sn deposition had to be hindered more than necessary in Sn-Ni baths. The Co alloy was finegrained, hard, and bright, with the composition CoSn. X-ray diffraction showed it crystallized with a cubic structure ($a = 4.20 \text{ \AA}$) differing from hexagonal cast CoSn. Electrodeposited CoSn decomposed at 200° without changing appearance, into CoSn₂ and γ' -Co₃Sn₂, and tarnished at 350°. It was completely passive in aqueous media from pH 1.4 to 14, and the passivation potential is estimated to be (298°K) $-(0.44 - 0.06 \text{ pH}) \text{ V}$. The passive film can transform to higher oxidation states, the highest with a potential $+(1.68 - 0.06 \text{ pH}) \text{ V}$, but it remains protective. CoSn dissolved fairly readily in concentrated HCl.

CC 77-6 (Electrochemistry)

Section cross-reference(s): 70

ST **electrodeposition cobalt tin** intermetallic
 compd; crystal structure intermetallic **cobalt tin**;
 passivation potential pH **cobalt tin**
 IT Passivation
 (of **cobalt-tin** intermetallic compound electroplates)

L115 ANSWER 8 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN

AN **1971:145497** HCAPLUS Full-text

DN **74:145497**

TI **Cobalt-tin** system alloys

AU Panteleimonov, L. A.; Portnova, G. F.; Nesterova, O. P.

CS USSR

SO Vestnik Moskovskogo Universiteta, Seriya 2: Khimiya (1971),
 12(1), 117-19

CODEN: VMUKA5; ISSN: 0579-9384

DT Journal

LA Russian

AB **Co₃Sn₂**, **CoSn**, and **CoSn₂** were observed in the **Co-Sn** system during thermal and x-ray diffraction anal. and microstructural and microhardness studies of alloys prepared in a high-frequency furnace in a He atmospheric No **Co₂Sn** compound was observed The polyhedral structure of the alloy with 40% **Sn** corresponded to **Co₃Sn₂**. Alloys with 24% **Sn** had a eutectic structure formed by a solid solution of **Co** and **Co₃Sn₂**. The alloys with 25-39% **Sn** were hypereutectic and consisted of a solid solution of **Co₃Sn₂** and eutectic. The polyhedral structure was detected in alloy containing 49% **Sn** and consisting of **CoSn**. The alloys with 41-48% **Sn** had 2-phase structures of a solid solution of **Co₃Sn₂** and **CoSn**. A 2-phase structure, formed by a solid solution from **CoSn** and **CoSn₂**, was evident from pictures of alloys containing 54-59% **Sn**.

CC 56 (Nonferrous Metals and Alloys)

ST **cobalt tin** phases structures

IT **Tin** alloys, base

Tin alloys, containing

(**cobalt-**, structure of)

IT **Cobalt** alloys, base

Cobalt alloys, containing

(**tin-**, structure of)

IT 12297-65-3P 12394-61-5P 12526-67-9P

RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, in **cobalt-tin** alloys)

IT 12394-61-5P 12526-67-9P

RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, in **cobalt-tin** alloys)

RN 12394-61-5 HCAPLUS

CN Cobalt, compd. with tin (1:2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Co	1	7440-48-4
Sn	2	7440-31-5

RN 12526-67-9 HCAPLUS

CN Cobalt, compd. with tin (3:2) (7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Co	3	7440-48-4
Sn	2	7440-31-5

L115 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1910:8862 HCAPLUS Full-text
DN 4:8862
OREF 4:1597a
TI Cobalt and Tin
AU Ducelliez, F.
SO Bull. soc. chim. (1910), 7, 205
DT Journal
LA Unavailable
AB The study of the e. m. f. curve showed only one compound, CoSn, although
chemical exam. had suggested Co3Sn2 as well.
CC 9 (Metallurgy)
IT 7440-36-0, Antimony
(system, Co-Sb)
IT 7440-31-5, Tin
(system, Co-Sn)
IT 7440-48-4, Cobalt
(system, Sb-Co)
IT 7440-48-4, Cobalt
(system, Sn-Co)
IT 7440-31-5, Tin
(system, Co-Sn)
RN 7440-31-5 HCAPLUS
CN Tin (CA INDEX NAME)

Sn

=> => fil wpix.

FILE 'WPIX' ENTERED AT 11:45:57 ON 18 APR 2007

COPYRIGHT (C) 2007 THE THOMSON CORPORATION

FILE LAST UPDATED: 17 APR 2007 <20070417/UP>

MOST RECENT THOMSON SCIENTIFIC UPDATE: 200725 <200725/DW>

DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> New reloaded DWPI Learn File (LWPI) available as well <<<

>>> YOU ARE IN THE NEW AND ENHANCED DERWENT WORLD PATENTS INDEX <<<

>>> New display format FRAGHITSTR available <<<

SEE ONLINE NEWS and

http://www.stn-international.de/archive/stn_online_news/fraghitstr_ex.pdf

>>> IPC Reform backfile reclassification has been loaded to 31 December
2006. No update date (UP) has been created for the reclassified
documents, but they can be identified by 20060101/UPIC and
20061231/UPIC. <<<

FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,
PLEASE VISIT:

http://www.stn-international.de/training_center/patents/stn_guide.pdf

FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE

<http://scientific.thomson.com/support/patents/coverage/latestupdates/>

PLEASE BE AWARE OF THE NEW IPC REFORM IN 2006, SEE
http://www.stn-international.de/stndatabases/details/ipc_reform.html and
<http://scientific.thomson.com/media/scpdf/ipcrdwpf.pdf>.

>>> FOR DETAILS ON THE NEW AND ENHANCED DERWENT WORLD PATENTS INDEX
 PLEASE SEE
[<<<](http://www.stn-international.de/stndatabases/details/dwpi_r.html)
 'BI ABEX' IS DEFAULT SEARCH FIELD FOR 'WPIX' FILE

=> d bib abs tech abex

L134 ANSWER 1 OF 1 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN

AN 2006-631721 [66] WPIX Full-text

DNC C2006-194788 [66]

DNN N2006-509300 [66]

TI Cathode material for non-aqueous secondary battery, contains **tin** and iron, nickel and/or **cobalt**, and does not have phase of specific intermetallic compound

DC L03; M22; P53; X16

IN NAGATA T; NEGI N; SAGUCHI A; YASHIRO M

PA (SUMQ-C) SUMITOMO METAL IND LTD; (JUKI-N) JUKIN MORIKOPU KK

CYC 1

PIA JP 2006236835 A 20060907 (200666)* JA 13[2]

ADT JP 2006236835 A JP 2005-51189 20050225

PRAI JP 2005-51189 20050225

AN 2006-631721 [66] WPIX Full-text

AB JP 2006236835 A UPAB: 20061013

NOVELTY - The cathode material contains **tin** and at least one element chosen from iron, nickel and/or **cobalt**, and comprises a phase of specific compound(s). The cathode material is manufactured by rapid solidification method. The phase of intermetallic compound does not exist in the cathode material.

DETAILED DESCRIPTION - The cathode material contains **tin** and at least one element chosen from iron, nickel and/or **cobalt**, and comprises a phase of specific compound(s). The cathode material is manufactured by rapid solidification method. The cathode material does not contain the phase of an intermetallic compound of formula: $AaSn_b$, where A is element chosen from nickel, **cobalt** and iron, and a/b is atomic ratio and is greater than 1. An INDEPENDENT CLAIM is included for manufacture of cathode material.

USE - For non-aqueous secondary battery such as lithium ion secondary cell used for portable electronic device.

ADVANTAGE - The cathode material has high discharge capacitance and improved initial-stage efficiency, with reduced irreversible capacitance during first-time charging and discharging. DESCRIPTION OF DRAWINGS - The graph shows the X-ray diffraction result of the cathode material. (Drawing includes non-English language text)

TECH

INORGANIC CHEMISTRY - Preferred Composition: The cathode material further contains element(s) chosen from aluminum, titanium, zirconium and indium, and does not contain **Co₃Sn₂** phase. The cathode material comprises **CoSn** phase and/or **CoSn₂** phase.

=> d his

(FILE 'HOME' ENTERED AT 09:51:02 ON 18 APR 2007)
 SET COST OFF

FILE 'HCAPLUS' ENTERED AT 09:51:26 ON 18 APR 2007

L1 1 S US20040053131/PN OR (US2003-664683# OR JP2002-271710)/AP, PRN
E TANIZAKI/AU
L2 47 S E15, E19
E HIROAKI/AU
L3 4 S E3
L4 4 S E50
E OMARU/AU
L5 43 S E4, E6
E ATSUO/AU
L6 1 S E3
SEL RN L1

FILE 'REGISTRY' ENTERED AT 10:11:45 ON 18 APR 2007

L7 21 S E1-E21
L8 1 S L7 AND SN/MF
L9 7 S L7 AND SN/ELS AND CO/ELS AND 2/ELC.SUB
L10 1 S 12394-61-5
L11 1 S 39286-52-7
L12 1 S 12526-67-9
L13 8159 S (CO/ELS OR COBALT OR 7440-48-4/CRN) AND (SN/ELS OR TIN OR 744
L14 191 S L13 AND 2/ELC.SUB
L15 184 S L14 NOT L9
L16 80 S L15 AND NONBASE
L17 3 S L16 AND CO(A) SN
L18 171 S L15 AND BASE
L19 2 S L18 AND CO(A) SN
L20 3 S L11, L17, L19
L21 194 S SN/MF
L22 55 S L21 NOT MASS

FILE 'HCAPLUS' ENTERED AT 10:19:58 ON 18 APR 2007

L23 248 S L20
L24 282 S COSN
L25 515 S L23, L24
L26 48 S L10
L27 50 S COSN2
L28 81 S L26, L27
L29 37 S L12
L30 47 S CO3SN2
L31 59 S L29, L30
L32 99798 S L8, L22
L33 4 S L25 AND L28 AND L31 AND L32
L34 10 S L25 AND L28 AND L32
L35 6 S L25 AND L31 AND L32
L36 6 S L28 AND L31 AND L32
L37 14 S L33-L36

FILE 'REGISTRY' ENTERED AT 10:24:29 ON 18 APR 2007

FILE 'HCAPLUS' ENTERED AT 10:26:04 ON 18 APR 2007

L38 13 S L25 AND L28 AND L31
L39 23 S L37, L38
L40 248 S L11, L17, L19
L41 48 S L10
L42 37 S L12
L43 1 S L40 AND L41 AND L42
L44 14 S L37, L43
L45 1 S L1-L6 AND L44
L46 56 S L1-L6 AND SONY?/PA, CS

L47 4 S L46 AND PY<=2002 NOT P/DT
 L48 51 S L46 AND (PD<=20020918 OR PRD<=20020918 OR AD<=20020918) AND P
 L49 4 S L46 AND PY<=2003 NOT P/DT
 L50 52 S L46 AND (PD<=20030918 OR PRD<=20030918 OR AD<=20030918) AND P
 L51 56 S L47-L50
 L52 5 S L45,L51 AND L32
 L53 12 S L37 AND PY<=2002 NOT P/DT
 L54 12 S L37 AND PY<=2003 NOT P/DT
 L55 2 S L37 NOT L53,L54
 L56 18 S L52-L55
 L57 1828 S L40 OR SN(A)CO OR COSN OR L23 OR L24
 L58 14 S L57 AND L28 AND L31
 L59 4 S L58 AND L32
 L60 16 S L57 AND L28 AND L32
 L61 9 S L57 AND L31 AND L32
 L62 6 S L28 AND L31 AND L32
 L63 33 S L58-L62
 L64 23 S L63 AND PY<=2003 NOT P/DT
 L65 23 S L63 AND PY<=2002 NOT P/DT
 L66 3 S L63 AND (PD<=20020918 OR PRD<=20020918 OR AD<=20020918) AND P
 L67 3 S L63 AND (PD<=20030918 OR PRD<=20030918 OR AD<=20030918) AND P
 E ELECTRODE/CW,CT
 L68 0 S L64-L67 AND E3,E4
 L69 0 S L64-L67 AND E94,E95
 L70 3 S L64-L67 AND E95+OLD,NT
 L71 5 S L64-L67 AND ?ELECTRODE?
 L72 6 S L70,L71
 L73 1 S L63-L72 AND L1-L6
 L74 2 S L63-L72 AND SONY?/PA,CS
 L75 6 S L72-L74
 L76 20 S L64-L74 NOT L75
 SEL DN AN 1 13 15 16 20
 L77 5 S L76 AND E1-E15
 L78 11 S L75,L77
 L79 7 S L44 NOT L78

FILE 'REGISTRY' ENTERED AT 11:12:43 ON 18 APR 2007

L80 114970 S LI/ELS OR ?LITHIUM?/CNS OR 7439-93-2/CRN
 L81 5954 S L80 AND (B/ELS OR (?BORON? OR ?BORAT? OR ?BORIC?)/CNS OR 7440
 L82 1012 S L80 AND (GA/ELS OR ?GALLIUM?/CNS OR 7440-55-3/CRN)
 L83 935 S L80 AND (SB/ELS OR ?ANTIMON?/CNS OR 7440-36-0/CRN)
 L84 439 S L80 AND (CD/ELS OR ?CADIUM?/CNS OR 7440-43-9/CRN)
 L85 1320 S L80 AND (AG/ELS OR ?SILVER?/CNS OR 7440-22-4/CRN)
 L86 355 S L80 AND (HF/ELS OR ?HAFNIUM?/CNS OR 7440-58-6/CRN)
 L87 9769 S L81-L86

FILE 'HCAPLUS' ENTERED AT 11:15:37 ON 18 APR 2007

L88 17007 S L87
 L89 6 S L88 AND L57
 L90 1 S L88 AND L28
 L91 0 S L88 AND L31
 L92 215 S L88 AND L32
 L93 0 S L89,L90 AND L92
 L94 7 S L89,L90
 L95 5 S L94 NOT (98:72913 OR 96:122986)/DN
 L96 0 S L95 AND PY<=2002 NOT P/DT
 L97 0 S L95 AND PY<=2003 NOT P/DT
 L98 4 S L95 AND (PD<=20030918 OR PRD<=20030918 OR AD<=20030918) AND P
 L99 3 S L95 AND (PD<=20020918 OR PRD<=20020918 OR AD<=20020918) AND P
 L100 4 S L98,L99

L101 3 S L100 NOT SOLUTION/TI
 L102 14 S L78,L101
 L103 14 S L102 AND (SN OR TIN OR LI OR LITHIUM OR CO OR COBALT OR ?CARB

FILE 'REGISTRY' ENTERED AT 11:20:07 ON 18 APR 2007

L104 2 S (CARBON OR GRAPHITE)/CN

FILE 'HCAPLUS' ENTERED AT 11:20:09 ON 18 APR 2007

L105 2 S L104 AND L102
 L106 14 S L103,L105
 SEL HIT RN

FILE 'REGISTRY' ENTERED AT 11:21:11 ON 18 APR 2007

L107 18 S E16-E33
 L108 13 S L107 AND L87
 L109 5 S L107 NOT L108

FILE 'REGISTRY' ENTERED AT 11:24:13 ON 18 APR 2007

FILE 'HCAPLUS' ENTERED AT 11:25:14 ON 18 APR 2007

L110 5 S L106 AND (CATHODES+OLD,NT OR ANODES+OLD,NT OR ELECTRODES+OLD,
 L111 5 S L106 AND H01M/IPC,IC,ICM,ICS
 L112 5 S L110-L111
 L113 4 S L106 AND (PRIMARY BATTERIES+OLD,NT OR SECONDARY BATTERIES+OLD
 L114 5 S L112,L113
 L115 9 S L106 NOT L114

FILE 'WPIX' ENTERED AT 11:28:08 ON 18 APR 2007

E CO SN/MF
 E CO.SN/MF
 E CO . SN/MF
 E COSN/MF
 E TIN COBALT/CN
 E COBALT TIN/CN
 E COBALT STAN/CN
 E STAN/CN
 L116 1 S US20040053131/PN
 L117 51655 S H01M004/IPC,IC,ICM,ICS
 L118 13670 S H01M004-02/IPC,IC,ICM,ICS
 L119 3750 S H01M004-38/IPC,IC,ICM,ICS
 L120 2246 S L117 AND TIN
 L121 68 S L117 AND (COSN OR (CO OR COBALT) (A) (SN OR TIN))
 L122 2 S L117 AND (COSN2 OR CO(A)SN2)
 L123 2 S L117 AND (CO3SN2 OR CO3(A)SN2)
 L124 2 S L121 AND L122,L123
 L125 3 S L122-L124
 E TIN/CN
 L126 1 S E3
 E COBALT/CN
 L127 1016 S R03102/DCN
 L128 5 S L119 AND L127
 L129 0 S L128 AND L125
 L130 1 S COBALT/CN
 L131 2977 S R03034/DCN
 L132 6 S L119 AND L131
 L133 3 S L125 AND (CO OR COBALT OR SN OR TIN OR COSN OR COSN2 OR CO3SN
 L134 1 S L133 AND L121 AND L122 AND L123

FILE 'WPIX' ENTERED AT 11:45:57 ON 18 APR 2007